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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/839,952	04/19/2001	Naoko Iwami	36992.00072	4508

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EXAMINER

NGUYEN, TRONG NHAN P

ART UNIT	PAPER NUMBER
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2152

DATE MAILED: 08/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/839,952

Applicant(s)

IWAMI, NAKO

Examiner

Jack P Nguyen

Art Unit

2154

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-34 are being examined.

Specification

2. The disclosure is objected to because of the following informalities: in section [0044] of the specification, applicant omits the following:

- Applicant states, "If the data packet is from a source external to the data center 1013, then Otherwise..." Applicant fails to state the action for this step.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 34 is rejected under 35 U.S.C. 102(b) as being anticipated by Microsoft – Understanding Network Address Translation, (hereafter Microsoft), 2/28/00, pages 1-3.

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5. As per claim 34, Microsoft teaches a method for managing storage, comprising: receiving a data packet (page 2); searching for a virtual destination address retrieved from said data packet (pages 2 and 3); reading a corresponding destination address for a particular one of at least one of a plurality of devices that store information (pages 2 and 3); and replacing in said data packet said virtual destination address with said corresponding destination address (pages 2 and 3).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 10, 15-17, 26, and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Vos, 6,192,454, (hereafter De Vos), in view of Microsoft.

8. As per claim 10, De Vos teaches a storage apparatus comprising: a server (F1B, E60), having a processor, a memory, and at least one port operative to connect to an external network (fig. 1B, element 60; fig. 10, elements 68, 70, 61); at least one of a plurality of devices that store information, each of said devices further comprising at least one of a plurality of volumes (F1A, E20, E21, C8, L51-67); a switch

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(F1B, E1); and an internal network connecting said server, said switch, and said at least one of a plurality of devices that store information (F1B, E1, E60, E62, C2, L47-61);

De Vos does not teach wherein said server receives a data packet for storing, and thereupon searches in said memory for a virtual destination address retrieved from said data packet, and thereupon reads from said memory a corresponding destination address for a particular one of said at least one of a plurality of devices that store information, and thereupon replaces in said data packet said virtual destination address with said corresponding destination address from said memory.

Microsoft teaches the concept of network address translation (NAT) for use by gateways or routers in a Wide Area Network (WAN). For incoming data packets sent from the Internet, the gateway receives data packets with virtual addresses from the Internet and assigns corresponding the destination addresses that is known only by the private network and delivers the data packets to its destination (pages 2-3). For outgoing packets originated from the private network sent to the Internet, the reverse address translations would take place. It would have been obvious to one of ordinary skill in the art at the time of invention to modify De Vos by including the NAT functionality to the gateway in view of Microsoft (pages 2-3). One of ordinary skill in the art would have been motivated to combine the teachings of De Vos and Microsoft to assign private addresses to public virtual addresses (and vice versa) to protect the

privacy of private networks by concealing the identity of private addresses from external networks.

9. As per claim 26, De Vos teaches a storage apparatus comprising: at least one of a plurality of devices that store information (F1A, E20), each of said devices further comprising at least one of a plurality of volumes, a processor, a memory, and at least one port operative to connect to an external network (F1A, E20, E21; F2A, E22, E24, E29); a switch (F1B, E1); a server (F1B, E60); and an internal network connecting said server, said switch, and said at least one of a plurality of devices that store information (F1B, E1, E60, E62, C2, L47-61);

De Vos does not teach wherein said at least one of a plurality of devices that store information receives a data packet for storing, and thereupon searches in said memory for a virtual destination address retrieved from said data packet, and thereupon reads from said memory a corresponding destination address for a particular one of said at least one of a plurality of devices that store information, and thereupon replaces in said data packet said virtual destination address with said corresponding destination address from said memory.

Microsoft teaches the concept of network address translation (NAT) for use by gateways or routers in a Wide Area Network (WAN). For incoming data packets sent from the Internet, the gateway receives data packet with a virtual address from the

Internet and assigns corresponding the destination address that is known only by the private network and delivers the data packet to its destination (pages 2-3). For outgoing packets originated from the private network sent to the Internet, the reverse address translations would take place. It would have been obvious to one of ordinary skill in the art at the time of invention to modify De Vos by including the NAT functionality to the gateway in view of Microsoft (pages 2-3). One of ordinary skill in the art would have been motivated to combine the teachings of De Vos and Microsoft to assign a destination address that corresponds to a virtual destination address when the data packet enters the private network to conceal the identity of destination address from the Internet.

10. As per claims 15 and 31, De Vos does not teach the apparatus of claims 10 and 26, wherein said gateway searches in said data packet for a command and a virtual private volume identifier, and if found, thereupon searches in said memory for a volume identifier corresponding to said virtual private volume identifier, and thereupon replaces said virtual private volume identifier in said data packet with said volume identifier.

Microsoft teaches the concept of network address translation (NAT) for use by gateways or routers in a Wide Area Network (WAN). The gateway receives data packet with a virtual address from the Internet and assigns corresponding the destination address that is known only by the private network and delivers the data packet to its destination (pages 2-3). It would have been obvious to one of ordinary skill in the art at

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the time of invention to modify De Vos by including the volume identifier translation (NAT-like) functionality to the volume identifier in view of Microsoft (pages 2-3). One of ordinary skill in the art would have been motivated to combine the teachings of De Vos and Microsoft to assign a volume identifier that corresponds to a virtual volume identifier when the data packet enters the private network to conceal the identity of volume identifier from the Internet.

11. Claims 16 and 32 are rejected on the same basis as claim 10 and 26 but in reverse address translation order.

12. As per claims 17 and 33, De Vos teaches the apparatus of claims 10, and 26, wherein said gateway authenticates a source of said data packet based upon a user address in said data packet (F1B, E60, C1, L11-15; C2, L47-67; C3, L37-40; C4, L5-12. *The gateway (ATM switch), via the system manager, sends requested data to authorized recipients requesting the data.)*

13. Claims 1-3, 7-9, 18, 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Vos, in views of "Official Notice" and Microsoft.

14. As per claim 1, De Vos teaches a storage apparatus comprising: a gateway (fig. 1B, element 1, col. 2, lines 47-67; col. 8, lines 43-50. *Over networks where a plurality of ATM switches are used to for high speed data routing and transmission, ATM switches*

perform protocol translations and route data packets between the networks. Thus they are functionally equivalent of a gateway), having a processor, a memory, and at least one port operative to connect to an external network (fig. 1B, element 1. DeVos shows an ATM switch that has at least one port to connect to external network, but does not explicitly show a memory and processor in the drawing. "Official Notice" is taken by the examiner that the said devices also comprise a processor and memory and is well known in the art. It is obvious to one of ordinary skill in the art to know that a computer, such as the ones mentioned above, would have these components to perform their functions);

at least one of a plurality of devices that store information, each of said devices further comprising at least one of a plurality of volumes (F1A, E20, E21, C8, L51-67); a server (F1B, E60, C3, L37-40); a switch (F1B, E1); and an internal network connecting said gateway, said server, said switch, and said at least one of a plurality of devices that store information (F1B, E1, E60, E62, C2, L47-61);

De Vos does not explicitly teach wherein said gateway receives a data packet for storing, and thereupon searches in said memory for a virtual destination address retrieved from said data packet, and thereupon reads from said memory a corresponding destination address for a particular one of said at least one of a plurality of devices that store information, and thereupon replaces in said data packet said virtual destination address with said corresponding destination address from said memory.

Microsoft teaches the concept of network address translation (NAT) for use by gateways or routers in a Wide Area Network (WAN). For incoming data packets sent from the Internet, the gateway receives data packet with a virtual address and assigns corresponding the destination address that is known only by the private network and delivers the data packet to its destination (pages 2-3). For outgoing packets originated from the private network sent to the Internet, the reverse address translations would take place. It would have been obvious to one of ordinary skill in the art at the time of invention to modify De Vos by including the NAT functionality to the gateway in view of Microsoft (pages 2-3). One of ordinary skill in the art would have been motivated to combine the teachings of De Vos and Microsoft to assign a destination address that corresponds to a virtual destination address when the data packet enters the private network to conceal the identity of destination address from the Internet.

15. As per claim 18, De Vos teaches a storage apparatus comprising: a switch (F1B, E1), having a processor, a memory, and at least one port operative to connect to an external network (fig. 1B, element 1. *DeVos shows an ATM switch that has at least one port to connect to external network, but does not explicitly show a memory and processor in the drawing. "Official Notice" is taken by the examiner that the said devices also comprise a processor and memory and is well known in the art. It is obvious to one of ordinary skill in the art to know that a computer, such as the ones mentioned above, would have these components to perform their functions*);

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at least one of a plurality of devices that store information, each of said devices further comprising at least one of a plurality of volumes (F1A, E20, E21, C8, L51-67); a server (F1B, E60); and an internal network connecting said server, said switch, and said at least one of a plurality of devices that store information (F1B, E1, E60, E62, C2, L47-61);

De Vos does not teach wherein said switch receives a data packet for storing, and thereupon searches in said memory for a virtual destination address retrieved from said data packet, and thereupon reads from said memory a corresponding destination address for a particular one of said at least one of a plurality of devices that store information, and thereupon replaces in said data packet said virtual destination address with said corresponding destination address from said memory.

Microsoft teaches the concept of network address translation (NAT) for use by gateways or routers in a Wide Area Network (WAN). For incoming data packets sent from the Internet, the gateway receives data packet with a virtual address from the Internet and assigns corresponding the destination address that is known only by the private network and delivers the data packet to its destination (pages 2-3). For outgoing packets originated from the private network sent to the Internet, the reverse address translations would take place. It would have been obvious to one of ordinary skill in the art at the time of invention to modify De Vos by including the NAT functionality to the switch in view of Microsoft (pages 2-3). One of ordinary skill in the art would have been

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motivated to combine the teachings of De Vos and Microsoft to assign a destination address that corresponds to a virtual destination address when the data packet enters the private network to conceal the identity of destination address from the Internet.

16. As per claims 2 and 25, De Vos teaches the apparatus of claims 1 and 18, wherein said gateway authenticates a source of said data packet based upon a user address in said data packet (F1B, E60, C1, L11-15; C2, L47-67; C3, L37-40; C4, L5-12. *The gateway (ATM switch), via the system manager, sends requested data to authorized recipients requesting the data.)*

17. As per claim 3, De Vos teaches the apparatus of claim 1, wherein said external network comprises a virtual private network (VPN), and wherein said gateway performs VPN processing for said data packet (C2, L47-67; C4, L5-12. *The gateway sets up a virtual private path to send data packets from the source to the recipient across the networks.)*

18. As per claims 7 and 23, De Vos does not teach the apparatus of claims 1 and 18, wherein said gateway searches in said data packet for a command and a virtual private volume identifier, and if found, thereupon searches in said memory for a volume identifier corresponding to said virtual private volume identifier, and thereupon replaces said virtual private volume identifier in said data packet with said volume identifier.

Microsoft teaches the concept of network address translation (NAT) for use by gateways or routers in a Wide Area Network (WAN). The gateway receives data packet with a virtual address from the Internet and assigns corresponding the destination address that is known only by the private network and delivers the data packet to its destination (pages 2-3). It would have been obvious to one of ordinary skill in the art at the time of invention to modify De Vos by including the volume identifier translation (NAT-like) functionality to the volume identifier in view of Microsoft (pages 2-3). One of ordinary skill in the art would have been motivated to combine the teachings of De Vos and Microsoft to assign a volume identifier that corresponds to a virtual volume identifier when the data packet enters the private network to conceal the identity of volume identifier from the Internet.

19. Claims 8 and 24 are rejected on the same basis as claims 1 and 18, but in reverse address translation order.

20. As per claim 9, De Vos teaches the apparatus of claim 1, wherein said virtual destination address and said destination address are stored in a table (C2, L61-67.)

21. Claims 11-14 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Vos, in views of Microsoft and ATM Forum White Papers, "Multi-Protocol Over ATM (MPOA)", (hereafter MPOA), 1997, pages 1-3.

22. As per claims 11 and 27, De Vos and Microsoft teach the apparatus of claims 10 and 26, wherein said external network uses a first protocol and said internal network uses a second protocol, and wherein said gateway translates said data packet from said first protocol to said second protocol (De Vos, F1B, C8, L43-49. *One network may use ATM protocol while another network may use the same or different protocol.*)

Furthermore, MPAO teaches ATM switches can be used to translate different protocols between different networks over wide area network (WAN) and is functionally equivalent to a gateway or router (pages 1-3). It is obvious to one of ordinary skill in the art to be motivated to use ATM switches to connect different networks in the WAN that are functionally equivalent to gateways.

23. As per claims 12, 13, 28 and 29, De Vos teaches the apparatus of claims 11 and 27, wherein said first protocol comprises at least one of IP protocol, ATM, and Fibre channel and second protocol comprises at least one of IP protocol, ATM, and Fibre channel (C2, L47-67. *See paragraph 22 for more details.*)

24. As per claims 14 and 30, De Vos teaches the apparatus of claims 11 and 27, wherein said external network comprises a virtual private network (VPN), and wherein said gateway performs VPN processing for said data packet (C2, L47-67; C4, L5-12. *The gateway sets up a virtual private path to send data packets from the source to the recipient across the networks.*)

25. Claims 4-6 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Vos, in views of "Official Notice", Microsoft, and MPOA.

26. As per claims 4 and 19, De Vos, "Official Notice", and Microsoft teach the apparatus of claim 1 and 18, wherein said external network uses a first protocol and said internal network uses a second protocol, and wherein said gateway translates said data packet from said first protocol to said second protocol (F1B, C8, L43-49. *One network may use ATM protocol while another network may use the same or different protocol.*) Furthermore, MPAO teaches ATM switches can be used to translate different protocols between different networks over wide area network (WAN) and is functionally equivalent to a gateway or router (pages 1-3). It is obvious to one of ordinary skill in the art to be motivated to use ATM switches to connect different networks in the WAN that are functionally equivalent to gateways.

27. As per claims 5, 6, 20, and 21, De Vos teaches the apparatus of claims 4, 11, 19, and 27, wherein said first protocol comprises at least one of IP protocol, ATM, and Fibre channel and second protocol comprises at least one of IP protocol, ATM, and Fibre channel (C2, L47-67. *See paragraph 27 for more details.*)

28. As per claim 22, De Vos teaches the apparatus of claim 19, wherein said external network comprises a virtual private network (VPN), and wherein said gateway performs VPN processing for said data packet (C2, L47-67; C4, L5-12. *The gateway*

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sets up a virtual private path to send data packets from the source to the recipient across the networks.)

Conclusion

29. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Real Time Local and Remote Management of Data Files and Directories and Method of Operating the Same – Chow et al, 6,745,310
- Method and System For Accessing a Remote Storage Area – Prust, 6,735,623
- Multimedia File Systems Using File Managers Located on Clients For Managing Network Attached Storage Devices – Mukherjee et al, 6,466,978
- Virtual Volume Storage – Watanabe et al, 6,748,502
- Virtual Ports For Data Transferring of a Data Storage System – Blumenau et al, 6,421,711
- System and Method For Accessing a Storage Area Network as Network Attached Storage – Padovano, 6,606,690

30. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack P Nguyen whose telephone number is (703) 605-4299. The examiner can normally be reached on M-F 8:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (703) 305-8498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). jpn



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